

REMARKS

Claims 1-16 are pending in the application and stand rejected. Claims 1, 7 and 8 have been amended. Claims 5 and 6 have been canceled without prejudice. Applicants respectfully request reconsideration of the claim rejections based on the above amendment and following remarks.

Claim Objections

An objection was made to claim 6 for the reasons set forth on page 2 of the Office Action. Claim 6 has been canceled without prejudice and the objection is thus moot. Withdrawal of the claim objections is therefore requested.

Claim Rejections - 35 U.S.C. § 102

Claims 1-16 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,884,239 to Ono. It is respectfully submitted that at the very minimum, claims 1, 9 and 14 are patentably distinct and patentable over Ono.

More specifically, with respect to claim 1, it is respectfully submitted that Ono does not teach or suggest a method for electrically erasing an EEPROM by applying first and second voltages to first and second impurity regions, respectively, and then *switching the first and second voltages at least one time during the predetermined erase time such that the first voltage is applied to the second impurity region while the second voltage is applied to the first impurity region*, as essentially claimed in claim 1.

Advantageously, as explained, for example, on pp. 11-12, and illustrated in Figs. 5A, 5B and 5C of Applicants' specification, the switching of the applied voltages

between the drain and source regions results in uniform hole injection throughout the entire channel region of the EEPROM device, resulting in a uniform erase operation.

Although Ono discloses (in Col. 5 lines 5-21, and Figs. 6a and 6b) a method for electrically erasing an EEPROM by grounding a control gate and bulk substrate and applying voltages to the source and drain regions, Ono does not disclose or remotely suggest switching the applied voltages during an erase time. In fact, Ono explicitly discloses applying a source voltage V_s of 2V (first voltage) and applying a drain voltage of 14V (second voltage), wherein erasure is effected upon applying the drain voltage. Ono does not disclose switching the source and drain voltages such that 2V is applied to the drain and 14V is applied to the source.

In fact, Ono merely teaches that erasure is obtained via a current-avalanche effect that is produced in the vicinity of the drain junction between the gate oxide film, wherein hot-positive-carrier holes are injected into the gate (Col. 5, lines 6-12). The erasing method disclosed by Ono does not provide the advantages of the present invention that result from switching the applied voltages between the drain and source regions causing uniform hole injection and, thus, a uniform erase operation. Therefore, claim 1 is believed to be patentably distinct and patentable over Ono.

Furthermore, claim 9 is believed to be patentably distinct and patentable over Ono at least for the same reasons given above for claim 1. Indeed, it is respectfully submitted that Ono does not disclose or suggest *applying a first voltage to the source region and a second voltage to the drain region for a portion of a predetermined erase time, and*

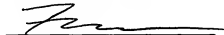
applying the second voltage to the source region and the first voltage to the drain region for a portion of the predetermined erase time, as essentially claimed in claim 9.

Moreover, claim 14 is believed to be patentably distinct and patentable over Ono at least for the same reasons given above for claims 1 and 9. In addition, Ono does not disclose or suggest *applying a third voltage to the gate electrode, wherein the potential differences between the third voltage and the first and second voltages are sufficient to generate electric fields between the gate electrode and the source and drain regions to inject holes into the source and drain regions*, as essentially claimed in claim 14. Indeed, as noted above, Ono merely discloses an erasing method by injecting holes in the vicinity of the drain junction.

Therefore, for at least the above reasons, claims 1, 9 and 14 are patentably distinct and patentable over Ono. In addition, claims 2-4 and 7-8 (which depend from claim 1), claims 10-13 (which depend from claim 9) and claims 15-16 (which depend from claim 14) are believed to be patentably distinct and patentable over Ono at least by virtue of their dependence from respective base claims 1, 9 and 14.

Accordingly, the withdrawal of the claim rejections under 35 U.S.C. 102 is respectfully requested.

Respectfully submitted,



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